



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,251	10/09/2003	Juha Lehtonen	2835-0143P	7510

2292 7590 02/21/2006

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
----------	--------------

1764

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/681,251

Applicant(s)

LEHTONEN ET AL.

Examiner

Walter D. Griffin

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Objections

Claim 5 is objected to because of the following informalities: The words “thiophene” and “alkylthiophenes” are misspelled in claim 5. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2, 9, and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is indefinite because it is unclear if the ratio is limited to 0.9 to 2.0 or is limited to 1.0 to 1.5. Therefore, the scope of the claim cannot be ascertained.

Claim 9 is indefinite because it contains the expression “the dimerization unit”. There is no antecedent basis for this language in claim 1.

Claim 10 is indefinite because it is unclear what type of reactor is used in the first step and what type is used in the second step.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1764

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stine et al. (US 5,847,252) in view of Lyman et al. (US 2,135,823).

The Stine reference discloses a process for producing a motor fuel component that comprises paraffins. The process comprises hydrotreating an olefinic stream obtained from a process in which butenes are dimerized. This olefinic stream contains C8 through C12 hydrocarbons. The hydrotreating is performed by passing the olefinic stream through a series of two reactors. Each hydrotreating reactor contains a catalyst such as a noble metal on an alumina support. The preferred reactors contain a fixed bed of catalyst. As shown in the figure, the reactants flow downward through the catalyst beds. It is clear that these reactors are trickle bed reactors. The effluent from the hydrotreating reactors heats the oligomerization zone feed.

Art Unit: 1764

Conditions in the hydrotreating reactors include temperatures ranging from 200° to 600°F (93° to 316°C) and pressures ranging from 100 to 1000 psi (6.9 to 69 bar). Hydrogen to hydrocarbon ratios range from 0.1 to 2. See column 2, lines 52-67; column 3, lines 1-7; column 4, lines 58-67; column 5, lines 1-27; column 11, lines 50-67; column 12, lines 1-5 and 58-67; column 13, lines 1-3; column 14, lines 20-54; and the figure.

The Stine reference does not disclose the feed composition or that the feed contains sulfur compounds as claimed, does not disclose the amount of metal on the catalyst as claimed, and does not disclose the specific conditions for each reactor.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the Stine by using a feed containing the olefin types and amounts as in claim 3 because such a feed falls within the class of feeds disclosed by Stine and therefore would be expected to be effectively treated in the process of Stine.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stine by using catalyst metal amounts as in claims 5 and 6 because one would use the minimum amount of metal that is effective because noble metals are expensive.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have used conditions as claimed in the process of Stine because such conditions are within the ranges disclosed by Stine.

The Lyman reference discloses that the olefins to be oligomerized may contain sulfur and that this sulfur may be removed in a hydrotreating step. See page 4, right column, lines 20-35; page 5, left column, lines 48-61; and page 5, right column, lines 37-48.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Stine by utilizing a sulfur-containing stream because, as shown by Lyman, such feeds can be used to produce the desired products of Stine. By using a sulfur-containing feed, the product would necessarily be desulfurized in the hydrotreating step of Stine.

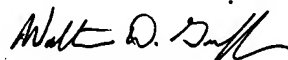
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on M-F 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
February 16, 2006